

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1-4 and 6-7 are pending in this application. By this Amendment, claim 1 is amended to recite an F_v/P value of 500 or larger, and to incorporate the subject matter of claim 2, as a result of which claim 2 has been cancelled without prejudice. Support for the F_v/P value of greater than or equal to 500 can be found at page 8, lines 15-16 of the specification. No new matter is added.

I. **Claim Rejection under 35 U.S.C. § 103**

The Examiner rejects claims 1-4 and 6-7 under 35 U.S.C. §103(a) as being unpatentable over EP 1063256 (“EP ‘256”). Applicants respectfully traverse the rejection.

In response to Applicants’ argument that EP ‘256 substantially fails to disclose the blend of polymers having different molecular weights, the Examiner asserts that “...a disclosure in a reference is not limited to its specific illustrative examples, but must be considered as a whole to ascertain what would be realistically suggested to one of ordinary skill in the art.” However, the only disclosure regarding the polymer blend in EP ‘256 is “The weight-average molecular weight of said vinylidene fluoride homopolymer or copolymer is preferably 3 x 10⁵ to 2 x 10⁶, and a mixture of two or more vinylidene fluoride homopolymer or copolymers having different molecular weights may be used.” (Emphasis added.) Because EP ‘256 does not disclose a single working example of using such a polymer blend, and this is the only disclosure regarding the polymer blend, one of ordinary skill in the art would not have expected a positive effect would be

attained by using such a polymer blend. Thus, the above-cited reference to a polymer blend in EP '256 would have merely suggested that the use of a polymer blend cannot be excluded from the scope of EP '256. However, this disclosure does not teach or suggest the specific polymer blend recited in claim 1.

Moreover, as discussed in Applicants' response filed June 11, 2008, EP '256 also fails to teach or suggest the other important features of the claimed invention. The porous hollow fiber of the present invention is characterized by:

- (b) a large basic water permeability F_o (i.e., a water permeability extrapolated to a test length of 0),
- (c) a large ratio F_o/P with respect to an average pore diameter P determining an effectively removable particle diameter,
- (a) an average slope C of $-20 \leq C$, representing a small decrease in water permeability F at an increased length L with respect to F_o , and
- (d) a suppressed outer diameter so as not to decrease the lower volume efficiency formed into a water filtration module.

Particularly, EP '256 fails to satisfy the combination of (a) an average slope C of $-20 \leq C$, and (c) a large ratio F_o/P of ≥ 500 , as recited in amended claim 1. The condition (a) is satisfied thorough the condition (f) a relationship of : $F_o/D_i^4 \leq 75$ between the basic permeability F_o ($m^3/m^2 \cdot day$) and an inner diameter D_i (mm) of the hollow fiber (now introduced from claim 2 into claim 1).

As it is difficult to determine the condition (a) with respect to EP '256, the conditions (c) and (f) are determined with respect to EP '256. Accordingly, for this purpose, values of F (water

permeability at an actual length) may be used in place of F_o (water permeability extrapolated to a test length of 0) for an approximate assumption. With respect to all the working examples (relating to hollow fibers instead of planar membranes allowing the calculation) of EP '256, the values of (c') F/P and (f) F/D_i^4 ⁴ can be easily calculated as follows from the disclosure of the following examples of EP '256:

	(c') F/P	(f) F/D_i^4
Example 7	50.7	<u>10.8</u>
Example 8	55.3	<u>13.8</u>
Example 9	49.3	<u>10.8</u>
Example 10	381.6	131.6
Example 11	441.4	372.1
Example 12	299.6	195.1
Example 15	306.5	164.7
Example 16	368.3	246.7
Example 17	460.6	158.8
Example 18	346.2	198.5
Example 19	381.7	321.3
Example 20	236.0	<u>37.3</u>
Example 21	378.7	189.4
Example 22	325.0	<u>45.8</u>

Only the underlined values satisfy either of (c') F/P \geq 500 and (f) $F/D_i^4 \leq 75$ as an approximate estimation of (c) $F_o/P \geq 500$ and (f) $F_o/D_i^4 \leq 75$ recited in amended claim 1.

The above results show that EP '256 does not satisfy the conditions (c) $F_o/P \geq 500$ and (f) $F_o/D_i^4 \leq 75$, as recited in claim 1, and the effectiveness of the use of the specific polymer blend, stretching and injection of an inert gas into the hollow part of the melt-extruded hollow fiber in the process of claim 7. Therefore, one of ordinary skill in the art would not have obtained a suggestion of the porous hollow fiber of claim 1 from the disclosure of EP '256.

Accordingly, claim 1 would not have been rendered obvious by EP '256. Claims 3, 4, 6

and 7 depend from claim 1 and, thus, also would not have been rendered obvious by this reference. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-4 and 6-7 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place the application in better condition for allowance, she is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Yasuhiro TADA et al.

By: Andrew B. Freistein

Andrew B. Freistein
Registration No. 52,917
Attorney for Applicants

MRD/ABF/vah
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
February 18, 2009

By Michael R. Davis 2/18/09